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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| EXAMINER |
|---|
| PORTNER, VIRGINIA ALLEN |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1645 | 43 |

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

| Application No. | Applicant(s) |
|---|---|
| 08/837,459 | McKee et al |
| **Examiner** | **Art Unit** |
| Portner | 1645 |

*-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on *Aug 4, 2003*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) *60 and 66-104* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *60 and 66-104* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

**DETAILED ACTION**

Claims 1-59, 72 have been canceled.

New Claims 97-104 have been added.

Claims 60, 66-96, 97-104 are pending and under consideration.

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**CONTINUED EXAMINATION UNDER 37 CFR 1.114 AFTER FINAL REJECTION**

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 4, 2003, has been entered.

***Rejections Withdrawn***

3. Claims 60, 66-71, 76-77, 80-81, 83, 85-88, 73-75, 84, 91-94, 78-79 and 82 under 35 U.S.C. 103(a) as being unpatentable over Childlow et al (US Pat. 4,141,970) in view of Cravioto et al (1991), in light of new grounds of rejection set forth below.

4. Claims 60, 66-71, 76-77, 80-81, 83, 85-90, 73-75, 84, 91-95, 78-79, 82 and 96 under 35 U.S.C. 103(a) as being unpatentable over Dougan in view of Childlow et al (US Pat. 4,141,970), in light of new grounds of rejection set forth below.

***New Grounds of Rejection***

***Claim Rejections - 35 U.S.C. § 112***

5. Claims 97-104 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 97-104 recite the phrase "overexpressed recombinant intimin". Applicant in the Amendment submitted August 4, 2003, pointed the Examples 2 and 3 of the instant specification at page 34-38, as providing support for the newly submitted combination of claim limitations.

Upon consideration of the instant specification at pages 34-38, the examiner found no original descriptive support for the phrase "overexpressed recombinant intimin", as recited in newly submitted claims 97-104. What was found was support for the recombinant expression of "histidine-tagged intimin (see Example 2, page 34, bolded subtitle)" and not "overexpressed recombinant intimin". Normal induction of expression of the recombinantly produced intimin was found at page 35, paragraph 1, but no overexpression was suggested, taught or described.

All of the newly submitted claims recite a combination of claim limitations for which original descriptive support could not be found in Examples 2-3. All of the newly submitted claims recite New Matter.

6. Claims 60, 66-96 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 60, and 66-96 recite the phrase "enriched or purified intimin protein". Upon consideration of the instant specification's definitions for enriched protein and purified protein, the examiner found at page 7, paragraph 1, first line the phrase "enriched protein comprising intimin".

The enriched protein comprising intimin is defined through narrative that relates to a method of making enriched intimin, which teaches the step of "expressing a protein comprising intimin having a histidine tag", followed by the step of "enriching the intimin"(see last paragraph on page 7 bridging over to page 8).

Original descriptive support for the now claimed genus of "enriched intimin" compositions used in the "administering" step have not been described. Only a single species of enriched intimin composition has been disclose, wherein enriched intimin comprises a histidine tagged.

The intimin recited in the claims does not comprise a his-tag, and therefore is not the enriched intimin composition which evidences original descriptive support in the instant specification. The purified protein compositions are distinguished from the enriched compositions through the removal of the his-tag from the enriched intimin (see page 7, paragraph 2). While the broad recitation of the term "purified intimin" evidences original descriptive support in the instant specification, the genus of compositions of "enriched intimin" does not. (see page 7, paragraph 1, middle of paragraph; page 8, paragraph 1, lines 1-3).

The claims recite New Matter as the administered composition is not " a protein that comprises intimin", the protein being his-tagged (see page 7, line 1; page 8, lines 1-3; page 11, Detailed Description, line 1; and last two lines on 11). Therefore claims 60, and 66-96, 97, 99 which recite a new genus of compositions that do not evidence original descriptive support in the

instant specification recite New Matter. Amendment of the claims to recite the disclosed enriched protein that comprises a his-tagged intimin protein could obviate this rejection.

7. Claims 68 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 68 depends from claim 67 and defines the host animal by the following phrase "is a milk producing animal"; this phrase broadens the scope of claim 67 which is directed to specific types of animals: cow, pig, rabbit and mouse. There are many more type of milk producing mammals than those recited in claim 67, thus claim 68 defines a genus of host animals and broadens the scope of claim 68 and is therefore not further limiting of claim 67 from which it depends.

***Claim Rejections - 35 U.S.C. § 103***

8. Claims 60, 66-67, 83-84, 89,97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougan et al (US Pat. 5,747,293, reference of record).

(Instant claim 60,83-84,89, 97) Dougan et al teach and suggest the instantly claimed invention directed to a method of providing passive immune protection to a patient in need thereof comprising the steps of:

administering purified intimin (the definition of intimin in the instant specification encompasses intimin-like proteins and portions thereof, see instant specification for definition at

page 11, first paragraph under Detailed Description of the invention) protein to a host (see '293, col. 1, lines 48-51; abstract, col. 1, line 3; col. 2, lines 36-37; recombinantly produced, see col. 5, lines 8-18) to generate anti-intimin antibodies (see '239, col. 5, lines 30-67 and col. 4, lines 47-60),wherein the administration is through injection together with an adjuvant (see col. 4, lines 47-59);

and suggests the step of administering an amount of the generated anti-intimin antibodies to a patient to provide passive immune protection (see '293, col. 2, lines 40-43; col. 2, lines 52-56; col. 3, lines 20-42). (Instant claim 66): wherein the host is an animal that is a laboratory animal ("immunise mice", see '293, col. 2, line 36; rabbits were immunized, see '293, col. 4, lines 51-52). (Instant claim 67): wherein the host animal is a mouse or a rabbit (see Examples 3 and 1, respectively).

Dougan et al teaches antibodies that specifically bind to the carboxy terminal of intimin, the carboxy terminal being that portion of intimin associated with binding to target cells, the antibodies serving to bind that portion of intimin that mediates intimate attachment of the bacteria to patient cells thus blocking establishment of infection and disease (see '239, col. 2, lines 43-44), but differs from the instantly claimed invention by failing to show the administration of the antibodies to a patient for passive immune treatment.

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to carry out the administration step of Dougan et al with the antibodies of Dougan et al because Dougan et al produced antibodies that bind to intimin on the surface of

E.coli (see col. 7, lines 2-3 and col. 8, lines 1-2), and would serve to block binding of Ecoli to patient cell to provide treatment against establishment of infection and disease.

Dougan et al teach, suggest and provide guidance for a method of providing passive immune protection to a patient through producing polyclonal and monoclonal antibodies to the receptor binding cite of purified intimin, and the person of ordinary skill in the art would have had a reasonable expectation of success of attaining passive protection through administration of the antibodies of Dougan et al because the antibodies of Dougan et al were either monoclonal or polyclonal antibodies (see '293, lines 52-56) that specifically bind to and recognize a region at the carboxy-terminal of enterohemorrhagic E.coli intimin protein or enteropathogenic E.coli intimin protein (see '293, col. 2, lines 47-52), that portion of intimin which mediates bacterial receptor binding to patient cells (see '293, col. 2, lines 10-11) and the antibodies would serve to provide passive immune protection through blocking binding of enterohemorrhagic E.coli to a mammalian cell (col. 7, lines 1-3 and col. 8, lines 1-3, agglutination of E.coli would block binding to a mammalian cell). Dougan et al obviate the instantly claimed invention.

**Conclusion**

9. This is a non-final action

10.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ginny Portner whose telephone number is (703)308-7543. The examiner

can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM except for the first Friday of each two week period.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith, can be reached on (703) 308-3909. The fax phone number for this group is (703) 308-4242. The Group and/or Art Unit location of your application in the PTO will be Group Art Unit 1645. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to this Art Unit.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Vgp
August 28, 2003

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